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**Sent:** 2/18/2012 1:12:07 PM  
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**Subject:** Dioxin - Environmental Health News

Check out the quote from Arnold Schechter.....

## Long-awaited dioxins report released; EPA says low doses risky but most people safe

By Marla Cone  
Editor in Chief  
Environmental Health News

February 17, 2012

After 21 years of wrangling over health threats, uncertain science and industry pressure, the U.S. Environmental Protection Agency on Friday released its health assessment of dioxins defining how toxic they are.

A group of about 30 toxic compounds, including the infamous chemical in Agent Orange, dioxins are byproducts of combustion emitted by waste incinerators, chemical manufacturing plants, paper and pulp mills and other facilities. They persist in the environment and build up in the food supply and in human bodies.

Lauded by environmental activists and criticized by industry, the report concluded after reviewing mounds of evidence that there are potentially serious effects at ultra-low levels of exposure. Studies have linked dioxins to cancer, disrupted hormones, reproductive damage such as reduced sperm counts, neurological effects in children and adults, immune system changes and skin disorders.

Dioxins have been called the most toxic of all man-made chemicals, based on animal studies that show effects at extremely low doses – in the parts per trillion. Nevertheless, the EPA said that people's exposures have declined so much in the past two decades that most people are safe. "Today's findings show that generally, over a person's lifetime, current exposure to dioxins does not pose a significant health risk," EPA officials said.

One scientist who studies dioxins, Arnold Schecter of University of Texas School of Public Health, questioned that statement, calling it "very odd," because some people are more highly exposed than average and some groups, such as fetuses and nursing babies, are more sensitive to the effects.

Most people on Earth have traces of dioxins in their bodies, and they are exposed mostly through eating fish, meat and other animal products.

The EPA broke the risk assessment into two parts; today's release includes only the non-cancer effects.

The EPA left a key number the same as when a draft was unveiled in 2010. The daily level of exposure considered safe is set at 0.7 picograms of dioxins per kilogram of body weight. Back in 2010, industry groups criticized the EPA for setting this so-called "reference dose" too low, saying it would alarm consumers and drive costly regulations. The level set by the World Health Organization/United Nations in 2001 is about three times higher.

The EPA said in its report that its "safe" level was based on two studies: One that found reduced sperm counts in men exposed in childhood and another that found infants with increased thyroid hormones if their mothers were exposed during pregnancy. Thyroid hormones are critical to normal growth and development.

The health assessment does not set enforceable standards. But it is critical to guiding many actions, such as cleanup of Superfund and other hazardous waste sites, industrial emission controls, drinking water standards and dietary guidelines for fish.

The first assessment was completed in 1985, and since then the scientific evidence linking dioxins to a variety of human health threats has grown. But at the same time, many scientific uncertainties have remained, fueling the debate over what levels of dioxins are safe. One perpetual issue is how to estimate potential human effects when harm is found in tests on lab animals.

EPA launched this reassessment in 1991. An initial version was criticized by a panel of the National Academy of Sciences in 2006 for failing to justify its low-dose findings and not detailing the uncertainties.

Environmentalists, who have been pressuring the Obama Administration's EPA to finally finish the report, applauded its release.

"After 27 years of delays, I quite honestly never thought this report would ever see the light of day," Lois Marie Gibbs, executive director of the Center for Health, Environment & Justice, said in a statement Friday. "Today the American people won a major victory against the chemical industry, who has been working behind closed doors for decades to hide and distort the truth about the dangers of dioxin. The science is clear: dioxin is toxic to our children's health and development."

The health assessment does not set enforceable standards, but will guide actions such as cleanup of Superfund and other hazardous waste sites, industrial emission controls, drinking water standards and dietary guidelines for fish.

U.S. Rep. Edward J. Markey (D-Mass.), top Democrat on the Natural Resources Committee, said the EPA "has taken a major step toward protecting the public from dioxin by shining light on some of the health impacts this dangerous chemical has on the public." He asked chemical industries to "stop their efforts to block completion" of the report.

Environmental activists are now urging the EPA to complete the cancer part of the assessment and develop a national plan for reducing emissions and exposures, including efforts to address the food supply and new standards for what level is acceptable in soil after hazardous waste cleanups.

When the draft report came out, the main trade group for the chemical industry, the American Chemistry Council, called it "scientifically flawed."

"It is clear that the EPA is overstating the risks from what are now exceptionally low exposures to dioxin, driving ever more stringent and costly regulations without any clear benefit to public health," David Fischer, the group's assistant general counsel, said at the time. He said the assessment "offers little, if any, public health benefit" because emissions have declined substantially.

EPA officials said that since 1987, dioxin emissions from industry have declined more than 90 percent. But traces of the substances still remain in the food supply years, even decades, after they are emitted.

"Today, most Americans have only low-level exposure to dioxins," EPA officials said.

However, Stephen Lester, science director of the advocacy group Center for Health, Environment & Justice, said data in the new report show "that the average background exposure of the American public to dioxin in food is very close to or above the EPA new reference dose."

Schechter, an environmental health professor at University of Texas, said the agency's statement in the press release about people in general not being at risk could be misleading.

"I am puzzled regarding the statement about the health risk over a lifetime. As phrased it seems correct, for the average person, but we vary in sensitivity and time of exposure and there are some instances of higher exposure. Why not mention these as well?" he said.

In addition to babies and fetuses, AIDS patients and transplant patients may be at more risk from dioxins because of immune-suppressing effects, he said.

Linda Birnbaum, director of the National Institute of Environmental Health Sciences, said Friday that she hadn't yet read the report.

"It's about time," she said in an email after learning of its release, adding that "levels in food are much lower than they were in the past." Birnbaum, formerly with the EPA, is a leading expert on dioxins.

Because the compounds accumulate in fatty tissues, meat, dairy and some fish are primary sources of exposure for many people.

Sources of dioxins include Dow Chemical, municipal waste incinerators and back yard rubbish burning. Dioxins are released during the manufacture of chemicals used to make polyvinyl chloride (PVC) plastic for piping and other materials.

Dioxins have been called the most toxic of all man-made chemicals, based on animal studies that show effects at extremely low doses – in the parts per trillion. One dioxin compound, known as TCDD, was used in Agent Orange, the herbicide sprayed by the U.S. military throughout much of Southeast Asia during the Vietnam War.

EPA said Friday that it would release the other half of the dioxins report, which analyzes the evidence of their carcinogenicity, "as expeditiously as possible."

For more stories about dioxins from EHN's archives, look here.